Introducting the
Tevatron QCD Working Group

Joey Huston

Michigan State University

Formation

- Following the success of the Tevatron Electroweak Working Group, we (members of CDF and D0) would like to formally start a QCD Working Group

- There have been many informal contacts/meetings between CDF, D0 and interested theorists in the past on QCD-related issues, e.g.

  - Run 2 jet discussions, such as documented in www.pa.msu.edu/~huston/jet_meeting/jet_meeting.htm

    - where, for example,fix to midpoint cross section was discussed and ratified, but never formally written down

  - Matrix element/Monte Carlo meetings such as the ones that Steve Mrenna and I have organized

    - cepa.fnal.gov.patriot/mc4run2

Some issues

- 1. Jet algorithms: in meetings with D0 and theorists like Steve Ellis and Walter Giele, some of the details not previously specified in the midpoint algorithm were worked out in a way that CDF and D0 would be comparing to the same prediction; there are some other issues that have just come up that may also require re-visiting in the near future.

- 2. Matrix element + Monte Carlo merging systematics, as in MLM and CKKW; important for many types of analyses but in the end a QCD issue

- 3. Comparisons to NLO parton level programs; there are some issues that could be standardized between the two experiments (e.g. hadronization corrections); there is also the question of ratifying/verifying MC@NLO as new processes become available from the authors and otherwise providing feedback to the authors

- 4. Underlying event tuning; again important for many analyses and we have to understand how universal Tune A is

- 5. Treatment of pdf uncertainties and use of programs such as LHAPDF and LHAGLUE

- 6… and of course comparison/combining of results from Run 2 where/when appropriate

What will it do?

- Hold semi-regular meetings, some perhaps in conjunction with MC4Run2
- Solicit active participation of theorists in understanding Run 2 physics/solving problems
- Promote new calculations/programs/pdf's as they become available
- Serve as an interface with the LHC on common issues
- As with Tevatron EW WG, everyone with an interest is invited to join
- We will establish a webpage (placeholder for now is www.pa.msu.edu/~huston/tevqcdwg/wg.html) so that things can be written down as well as a mailing list
  - please send email to huston@msu.edu if interested
  - more organizing discussions in Sept TeV4LHC meeting